CLAIMS

1. Time-of-flight mass spectrometer, comprising:
(a) two cylindrical capacitors each having 254.56°, opposed in such a way that the flight paths of the ions, which consist of circular and linear sections, combine to form a figure of eight, the capacitors supplied with a deflecting potential for the ions; and
(b) an electrically conductive housing which encloses the linear flight paths between the cylindrical capacitors, whereby the potential of this housing is different from the mid potential between the capacitors.

2. Time-of-flight mass spectrometer according to Claim 1 wherein between each cylindrical capacitor and the electrically conductive housing, slit diaphragms are mounted which act as ion-optical slit lenses.

3. Time-of-flight mass spectrometer according to Claim 1 wherein in each case, in addition to the slit lenses, pairs of corrective electrodes are also mounted.

4. Time-of-flight mass spectrometer according to one of the Claim 1 wherein a pulser is incorporated which transforms a continuous primary beam from an ion source into a pulsed ion beam following a helical path in the capacitors.